

FURTHER NOTES ON THE ORCHIDS OF THE SOUTH MAITLAND
COALFIELDS, WITH DESCRIPTION OF A NEW *DENDROBIUM*
FROM BULLAHDELAH.

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(Four Text-figures.)

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I have given an account (These PROCEEDINGS, 1930, 413) of the autumn orchids of the South Maitland Coalfields and the present notes cover the winter and spring months, June to October, inclusive. One species, *Liparis reflexa* Lindl., was omitted from the autumn list, and may be recorded here with three belonging to the summer: *Sarcochilus Hillii* F.v.M., *Calanthe veratrifolia* R.Br., and *Dipodium punctatum* R.Br. Some of the autumn species are found flowering throughout the winter, but the only two to which I shall allude here are *P. ophioglossa* and *P. concinna*, a fairly obvious hybrid between these having been found in July.

Following is a list of the other orchids observed from June to October:

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| <i>Dendrobium speciosum</i> Sm. | <i>Diuris aurea</i> Sm. |
| <i>aemulum</i> R.Br. | <i>sulphurea</i> R.Br. |
| <i>gracilicaule</i> F.v.M. | <i>brevifolia</i> Rogers? |
| <i>teretifolium</i> R.Br. | <i>Microtis porrifolia</i> Spreng. |
| <i>striolatum</i> Reichb. f. | <i>parviflora</i> R.Br. |
| <i>Becklerii</i> F.v.M. | <i>oblonga</i> Rogers |
| <i>pugioniforme</i> Cunn. | <i>Corysanthes fimbriata</i> R.Br. |
| <i>linguiforme</i> Swz. | <i>pruinosa</i> Cunn. |
| <i>Bulbophyllum Shepherdii</i> F.v.M. | <i>Pterostylis nutans</i> R.Br. |
| <i>exiguum</i> F.v.M. | <i>pedunculata</i> R.Br. |
| <i>Sarcochilus falcatus</i> R.Br. | <i>curta</i> R.Br. |
| <i>olivaceus</i> Lindl. | <i>mutica</i> R.Br. |
| <i>Cleisostoma tridentatum</i> F.v.M. | <i>Mitchellii</i> Lindl. |
| <i>Cymbidium canaliculatum</i> R.Br. | <i>pusilla</i> Rogers |
| <i>suave</i> R.Br. | var. <i>prominens</i> , n. var. |
| <i>Calochilus cupreus</i> Rogers | <i>longifolia</i> R.Br. |
| <i>Robertsonii</i> Benth. | <i>Caleana major</i> R.Br. |
| <i>paludosus</i> R.Br. | <i>Chiloglottis formicifera</i> Fitzg. |
| <i>Thelymitra ixioides</i> Swz. | <i>Acianthus reniformis</i> R.Br. |
| <i>longifolia</i> Forst. | <i>Lyperanthus suaveolens</i> R.Br. |
| <i>nuda</i> R.Br. | <i>Caladenia testacea</i> R.Br. |
| <i>pauciflora</i> R.Br. | <i>alba</i> R.Br. |
| sp.? | <i>carnea</i> R.Br. |
| <i>carnea</i> R.Br. | <i>caerulea</i> R.Br. |
| | <i>Glossodia major</i> R.Br. |
| | <i>minor</i> R.Br. |

The epiphytes in this list (*Dendrobium* to *Cymbidium*) occur chiefly in the ranges on the S. and W. borders of the area. I am positively assured, however, that a white-flowering form of *Cymbidium canaliculatum* has been found not far from Weston, my informant having secured a plant and brought it to flower in cultivation. Unfortunately this plant has been sold. It is now some fifteen years since I first heard of a white-flowering form of this orchid, but I have never succeeded in obtaining a specimen.

CALOCHILUS.—Fitzgerald's representations of *C. paludosus* and *C. campestris* are difficult to understand. Dr. R. S. Rogers (*Trans. Roy. Soc. S. Aust.*, xlii, 1918) has noted that the former is incorrectly figured; while the flower of *C. campestris* is shown with a coloured ridge connecting the two column-glands, a feature peculiar to Bentham's *C. Robertsonii*. The basal portion of the labellum is also shown as callose, but calli are only present in var. *grandiflora*. The figures cannot be reconciled with published descriptions of either plant (including those of Fitzgerald himself in Moore and Betche's Handbook), and it may be in part due to this difficulty that we have for many years in New South Wales been confusing *C. campestris* with a plant which is really Dr. Rogers's species *C. cupreus*. The following tabulation of certain salient points in the four New South Wales species may help others in determination:

C. cupreus.—Plant slender or often very robust, with many relatively small flowers. Labellum not greatly prolonged, yellowish with fimbriate margins and reddish-blue hairs sometimes rather scanty; basal portion with raised longitudinal lines of similar colour to the hairs. Column with a gland on each side at the base, with an irregular line of brown blotches between them, but no ridge. Anther long, like a duck's bill.

C. campestris.—Flowers few, larger than those of *C. cupreus*, in var. *grandiflora* much so. Labellum much prolonged, densely covered with reddish-blue hairs except towards the base, where it is quite smooth (but in var. *grandiflora* beset with calli) and without raised lines. Column with a basal gland on either side, not connected by a ridge or coloured line. Anther acuminate or at least long and tapering.

C. Robertsonii.—Flowers usually few, variable in size. Labellum much prolonged, densely covered with purple metallic-lustrous hairs, which towards the base are reduced to calli, and there is a callose swelling on each side. Column with a basal gland on either side connected by a coloured ridge. Anther short and usually blunt.

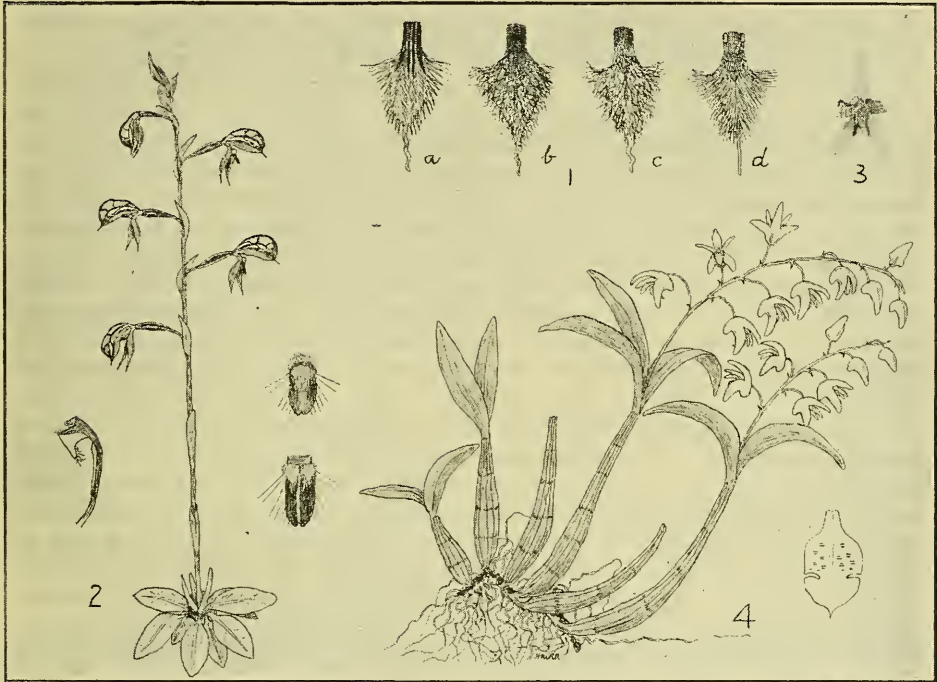
C. paludosus.—Plant often slender but sometimes tall with many flowers, which expand more widely than in other species. Labellum much prolonged, rather densely covered with long brilliant red hairs, which towards the base are reduced to calli, and there is a smooth, shining, much-raised plate on either side. Column devoid of basal glands. Anther short, thick, blunt.

All four normally have the apex of the labellum prolonged into a smooth, narrow ribbon, sometimes absent in *C. Robertsonii*. In *C. paludosus* it is often straight, in the others undulate. All except *C. campestris* are common on the coalfields.

THELYMITRA.—Near Weston a few immature plants were found in which the column appears to differ from that of any known species, but I was unable to secure sufficient good material for determination. *T. nuda* is the most abundant species. It is extremely shy, opening only for a few hours on warm, sunny days, when the pale-mauve flowers are very beautiful. The hair-tufts, usually almost

perpendicular, are of the same colour, or rarely whitish. *T. ixioides* occurs in a very slender form, occasionally 1-flowered. *T. pauciflora* and *T. longifolia* are uncommon, *T. carnea* is abundant.

DIURIS.—*D. punctata*, though abundant east of Maitland, has been searched for on the coalfields in vain. *D. aurea* is in great profusion, and very fine specimens have been seen. A very late form appeared in October, with rather



Text-figs. 1-4.

1. Labella of the four New South Wales species of *Calochilus*, enlarged and flattened out to display their distinctive features: *a*, *C. cupreus* with dark smooth ridges (commonly four) on the basal portion, and prominently fimbriate margins; *b*, *C. campestris* with a smooth, dark base obscurely lined with darker veins, hairs very undulate; *c*, *C. Robertsonii* with callose or very short hairy base, somewhat swollen on either side, hairs very undulate; *d*, *C. paludosus* with callose base and a smooth raised plate on either side, hairs scarcely undulate.

2.—*Pterostylis pusilla* var. *prominens*, n. var., with enlargements of labellum (right) and column (left). $\times 0.4$.

3. Flower of *Caladenia caerulea* with three labella and a stigma-capped style.

4. *Dendrobium Kestevenii*, n. sp. (much reduced), with enlargement of labellum flattened out.

small flowers, and markings suggestive of *D. sulphurea*. It is probably a hybrid, and seems to be rare. *D. sulphurea* is plentiful in October; the markings on the labellum exhibit endless variety. The labellum of this species is described as having a single raised line, but in the majority of flowers examined in this area it is merely smooth and convex (above) from lamina to base, with no raised line at all. An interesting variety occurs near Weston, the flowers being large but

very attenuated, with lateral sepals much elongated. Near the Weston Soldiers' Settlement, I found a single specimen of a tall *Diuris* with 7 flowers corresponding to *D. brevifolia* Rogers. The leaves, however, were two only, and very long. The specimen has retained its colour after pressing, which is unusual in a *Diuris*. No other forms of *Diuris* were seen in the vicinity.

MICROTIS.—The three species listed are typical.

CORYSANTHES.—The type of country would lead one to expect this genus to be strongly represented, but only the two species listed have been seen, and neither is common. *C. fimbriata* is large and richly coloured.

PTEROSTYLIS.—I have already alluded to the appearance in July of an apparent hybrid, *P. ophioglossa* × *P. concinna*. This plant, of which about 20 were found, has the general appearance of *P. concinna*, with which it is associated, but the following points connect it with *P. ophioglossa*: (1) Flower rather larger than the surrounding *P. concinna*, with the characteristic forward "set" of *P. ophioglossa*; (2) petals bluntly truncate with inturned margins; (3) fork of the bifid labellum intermediate in character and just protruding from the sinus of the paired sepals; (4) column rather sharply bent; (5) stem (with two exceptions) bractless except immediately under the ovary. Robert Brown says of *Pt. ophioglossa*, "scapo medio ebracteato", and this peculiarity is not mentioned by most authors. It is a rule to which there are exceptions, but when a stem-bract does occur it is always low down.

Of the remaining winter-spring forms of *Pterostylis*, only two call for special mention, and they are of considerable interest. One, of which only two plants have been seen, I believe to be *Pt. Mitchellii* Lindl., which I have hitherto regarded as a species confined to the western parts of the State. (It occurs in other States also.) It seems certain that Fitzgerald was mistaken in the plant he figures as *Pt. Mitchellii*. Fitzgerald's plant is much closer to, if not indeed a form of, *Pt. pusilla* Rogers. Dr. Rogers has kindly lent me a photograph of Sir Thomas Mitchell's original specimens in the Hooker Herbarium at Kew, and it is not possible to reconcile these with Fitzgerald's plant. I also received from Dr. Rogers, a few years ago, two specimens labelled *Pt. Mitchellii* from Grangeville, S. Aust., which agree perfectly with two from Warialda in this State, which I had determined as Lindley's species. The coalfields plant also agrees with these save for one or two trifling details. The other coalfields *Pterostylis* alluded to presents some difficulties. I believed it to be quite distinct from any species hitherto described, and Dr. Rogers wrote that it was certainly not identical with any species known to him. Mr. W. H. Nicholls, however, maintained its identity with a Victorian form included under *Pt. pusilla*. It certainly does not conform to Dr. Rogers' description of that species (*Trans. Roy. Soc. S. Aust.*, xlii, 1918), but I am compelled to admit that I cannot separate the flowers from those of the Victorian plant referred to. The form of the plant, however, seems very distinctive. It is abundant near Weston in September and October, and in appearance is unlike any other *Pterostylis* I have seen. The plant varies in height from a few inches to a foot, and the flowers range from 1 to 13. They are alternate along the raceme on long ovaries and stalklets which incline to the horizontal, giving the plant the semblance of a candelabra. The colour is green or whitish with very pronounced red markings and veins, or often wholly red. I am disposed to think that this plant and the Victorian form with similar flowers should be separated from *Pt. pusilla* as variations of another species, unless Dr. Rogers should re-

describe *Pt. pusilla* to include them. The manner of inflorescence (of the coal-fields plant) is so striking that I have no hesitation in proposing that it be recognized for the present as a variety, *Pt. pusilla* var. *prominens*.

CALEANA.—*C. major* appeared in August, earlier than I have seen it elsewhere, and was still plentiful two months later. It does not seem to occur in colonies here as a rule. A form with flowers wholly golden-green has been found.

CHILOGLOTTIS.—Numerous flowering plants of *C. formicifera* were found in September at Rocky Glen near Mount Vincent.

ACIANTHUS.—*A. reniformis* is very common, and typical. A plant found by Miss D. Watson has two perfect flowers united "back to back" on a common pedicel.

LYPERANTHUS.—*L. suaveolens* is very common, both red and pale-green flowers being in evidence. Often very tall, 2 ft.

CALADENIA.—*C. alba*, *C. carnea* and *C. caerulea* are all in very great profusion; *C. testacea* is less common. *C. alba* exhibits many variations, and some of the forms are extremely beautiful, notably one with reddish-purple lateral lobes to the labellum. Hybrids with *C. carnea* seem to be indicated by the presence of red bars on the column or the labellum. *C. carnea* itself shows little variation from the type. *C. caerulea* is exceptionally vigorous. For the first time I succeeded in finding a specimen bearing two perfect flowers. A most abnormal specimen was found by my son, Mr. Arthur Rupp, the paired petals being transformed into a second and a third perfect labellum. The three sepals are quite normal, but the column is represented by a slender style capped with a stigma; a loose purplish structure almost surrounds it at the base.

GLOSSODIA.—*G. major* and *G. minor* are both abundant, the latter especially so. Hybrids occur, and the white-flowering form of *G. major* has been found.

DENDROBIUM KESTEVENII, n. sp. Text-fig. 4.

Caules in saxis serpentes, cum radicibus multissimis. Pseudobulbi striati, ad bases turgidi, 5–20 cm. longi. Folia lanceolata 3–4, ad pseudobulborum apices, 5–8 cm. longa. Racemi inter folia, 10–24 cm. cum floribus 4–14. Flos albus vel pallidus, saepe puniceo tinctus. Sepala lata, 2 cm. longa, calcar saepe obtusissimum. Petala sepalis angustiora. Labellum latissimum, 15 mm. longum, mucronatum, cum notis puniceis vel purpureis. Columna turgida.

Stems creeping on rocks, with densely matted roots. Pseudo-bulbs grooved and jointed, swollen towards their bases, 5–20 cm. in height. Leaves 3 or 4, lanceolate, at the tops of the pseudobulbs, 5–8 cm. long. Racemes emerging between the upper leaves, 10–24 cm. long, with 4 to 14 flowers. Flower white or pale-cream, often tinted pink or mauve. Sepals broad, only 2 cm. long, the spur under the lateral pair prominent but often very blunt. Petals narrower than sepals. Labellum, when flattened out, very broad, 15 mm. long, lobed like that of *D. speciosum*, and splashed with pink or purple, mucronate at the straight or slightly recurved tip. Column very thick.

This very beautiful orchid was sent to me in September, 1930, by Dr. H. L. Kesteven of Bullahdelah, whose sons had discovered it on the rocks of the eastern side of the Alum Mountain. A little examination served to make clear its close relation to *D. speciosum*, while some features suggest some connection with *D. Kingianum*. As both these species are common on the Alum Mountain, it is

quite possible that cross-fertilization between them produced the subject of this description; but from Dr. Kesteven's account of it there can be little doubt that it is well established independently. It would certainly not be recognizable as a variety of either, and it appears to be well deserving of specific rank. The flowers do not expand quite so widely as those of *D. falcorostrum*, and are not quite as large, yet at first sight it instantly suggests that species. This species is quite a notable addition to our orchids. As far as I can judge from the large mass of the plant sent to me, the stem quite definitely creeps over the rocks. The pseudobulbs resemble those of *D. speciosum* in miniature, being shorter, more robust, and more strongly grooved than those of *D. speciosum* var. *gracillimum*. Relatively to the size of the plant, the flowers are much larger than in any form of *D. speciosum*. The shape of the spur, the broad, short sepals, and the mauve tints occasionally present, suggest affinities with *D. Kingianum*. The perfume is certainly not that of the Rock Lily.
